

SECTION V-B - FM BROADCAST ENGINEERING DATA (Page 6)

- (e) If authorization pursuant to 47 C.F.R. Section 73.215 is requested, attach as an Exhibit a complete engineering study to establish the lack of prohibited overlap of contours involving affected stations. The engineering study must include the following:

Exhibit No.
DNA

- (1) Protected and interfering contours, in all directions (360°), for the proposed operation.
- (2) Protected and interfering contours, over pertinent arcs, of all short-spaced assignments, applications and allotments, including a plot showing each transmitter location, with identifying call letters or file numbers, and indication of whether facility is operating or proposed. For vacant allotments, use the reference coordinates as transmitter location.
- (3) When necessary to show more detail, an additional allocation study utilizing a map with a larger scale to clearly show prohibited overlap will not occur.
- (4) A scale of kilometers and properly labeled longitude and latitude lines, shown across the entire exhibit(s). Sufficient lines should be shown so that the location of the sites may be verified.
- (5) The official title(s) of the map(s) used in the exhibit(s).

24. Is the proposed station for a channel in the range from Channel 201 to 220 (88.1 through 91.9 MHz) and the proposed antenna location within the distance to an affected TV Channel 6 station(s) as defined in 47 C.F.R. Section 73.525?

☒ Yes ☐ No

If Yes, attach as an Exhibit either a TV Channel 6 agreement letter dated and signed by both parties or a map and an engineering statement with calculations demonstrating compliance with 47 C.F.R. Section 73.525 for each affected TV Channel 6 station.

Exhibit No.
Fig. 6*

25. Is the proposed station for a channel in the range from Channel 221 to 300 (92.1-107.9 MHz)?

☐ Yes ☒ No

If Yes, attach as an Exhibit information required in 1/. (Except for Class B (secondary) proposals.)

Exhibit No.
DNA

26. Environmental Statement (See 47 C.F.R. Section 1.1301 et seq.)

Would a Commission grant of this application come within Section 1.1307 of the FCC Rules, such that it may have a significant environmental impact?

☐ Yes ☒ No

If you answer Yes, submit as an Exhibit an Environmental Assessment required by Section 1.1311.

Exhibit No.
DNA

If No, explain briefly why not. The proposed construction would have no significant environmental impact as defined in Section 1.1307 of the FCC rules. *

CERTIFICATION

I certify that I have prepared this Section of this application on behalf of the applicant, and that after such preparation, I have examined the foregoing and found it to be accurate and true to the best of my knowledge and belief.

Name (Typed or Printed) Keith G. Blanton	Relationship to Applicant (e.g., Consulting Engineer) Consulting Engineer
Signature <i>Keith G. Blanton</i>	Address (Include ZIP Code) Kessler and Gehman Assoc. Inc. 507 NW 60th St. Suite C Gainesville, FL 32607
Date December 4, 1992	Telephone No. (Include Area Code) (904) 332-3157

ENGINEERING STATEMENT OF KEITH G. BLANTON OF THE FIRM OF
KESSLER AND GEHMAN ASSOCIATES, INC., CONSULTING ENGINEERS,
IN CONNECTION WITH THE APPLICATION OF
THE BOARD OF REGENTS OF THE UNIVERSITY OF FLORIDA
FOR A CONSTRUCTION PERMIT FOR A NEW FM BROADCAST STATION
WHICH WOULD OPERATE ON CHANNEL 215 WITH AN EFFECTIVE RADIATED POWER
OF 2.0 KILOWATTS HORIZONTALLY AND VERTICALLY POLARIZED
AT AN EFFECTIVE ANTENNA HEIGHT OF 131 METERS ABOVE AVERAGE TERRAIN
IN THE VICINITY OF CRYSTAL RIVER, FLORIDA

I, Keith G. Blanton, am an associate of Kessler and Gehman Associates, Inc., with offices in Gainesville, Florida. I have been working in the field of radio and television consulting engineering since 1961. I graduated from Duke University in 1951 with a Bachelor of Science degree in Physics.

This firm has been employed by The Board of Regents of the University of Florida to make engineering studies and to prepare the engineering portion of an application for construction permit for a new Frequency Modulation Broadcast Station which would operate on channel 215A with an effective radiated power of 2.0 kilowatts horizontally and vertically polarized at an effective antenna height of 131 meters above average terrain in the vicinity of Crystal River, Florida.

ATTACHED FIGURES

In carrying out the engineering studies, the following attached figures were prepared by me or under my supervision:

1. Proposed engineering specifications.
2. Elevation drawing of the antenna system.
3. USGS topographic map showing the transmitter site and coordinate lines.
4. Map showing the proposed 1 mV/m contour.
5. Allocation studies.
7. Map showing lack of potential interference to channel 6 TV stations.

PROPOSED OPERATION

It is proposed to utilize a type accepted transmitter which in conjunction with a two bay circularly polarized antenna and 91 meters of 1 5/8 inch air dielectric heliax transmission line will produce an effective radiated power of 2.0 kilowatts horizontally and vertically polarized as shown in Figure 1.

PROPOSED STUDIO LOCATION

It is intended to receive the signals from WUFT-FM channel 206 in Gainesville, FL off the air and rebroadcast them on channel 215 to provide a public broadcasting service to the rapidly developing area about Crystal River which at the present time has no public broadcasting service available. It is therefore not intended to have a studio in the Crystal River area but only at the University of Florida campus in Gainesville some 86 km north of Crystal River. A waiver of Section 73.1125 of the FCC rules is requested to allow this operation.

PROPOSED SITE

It is proposed to side-mount the two bay circularly polarized antenna at 84 meters above ground on the existing 91 meter tower presently supporting several two way transmitting and receiving antennas. The FAA has not been notified of the proposal to side mount the FM antenna on the tower because no changes are proposed in the overall height of the tower. Since no increase in the tower height is proposed a commission grant of this application will not be a major action as defined in Section 1.1305 of the Commission's rules. Therefore it is not considered necessary to submit an environmental impact statement. The maximum power density on the ground at the base of the tower from the proposed operation would be 0.02 mW/cm² even assuming the antenna radiation is directed toward the ground where ANSI would allow 1.0 mW/cm². The applicant will reduce power or if necessary completely cut-off the power to the antenna in order to protect maintenance workers on the tower. There are no other FM, TV or non-broadcast stations in the vicinity of the tower. The blanketing contour (115 dBu) would extend 0.6

extend 0.6 km from the transmitter site based on free space field. If blanketing interference is caused to the few residents of this area the applicant will take steps to eliminate the interference in accordance with FCC rules. There are no proposed or authorized FM or TV stations within 9.6 km of the site that would produce receiver induced intermodulation interference by the proposed channel 215 operation. The applicant will accept the responsibility for the elimination of any objectionable interference (including that caused by receiver-induced or other types of modulation) to facilities in existence or authorized or to radio receivers in use prior to grant of this application.

ALLOCATION STUDY

The contours were plotted by a computerized plotter using the antenna radiation center AMSL in the FCC data base, terrain determined using the 3 arc second data base of the Defense Mapping Agency and the FCC propagation curves at every five degrees of horizontal azimuth starting at N00°E. The allocation study shown on the map Figure 5 indicates that the most critical separation is that between the WCIE-FM ch 216C1 54 dBu contour and the proposed ch 215A 60 dBu contour where the two contours fail to overlap by approximately 1.5 km. In order to help assure the FCC staff that these two contours do not overlap the three second terrain data and distances to contours used in plotting the contours of the two stations have been calculated at 1 degree of horizontal azimuth increments over the critical arcs and are tabulated in Figure 5B. The enlarged area is shown on the map Figure 5A.

POSSIBLE CHANNEL 6 TV INTERFERENCE

WCPX-TV channel 6 at Orlando, FL is the only channel 6 TV station within 180 km of the proposed site and thereby subject to receiving interference from a channel 215 FM station. The proposed site is 145.3 km from WCPX-TV whose Grade B contour extends approximately 113 km toward the proposed channel 215 site. Since the channel 215 F(50,10) 80.0 dBu contour extends only approximately 7 km the proposed operation would fail to cause interference within the WCPX-TV Grade B contour by approximately 25 km.

COMPLIANCE WITH FM STATION MILEAGE SEPARATION REQUIREMENTS

The proposed site will meet the separation requirements involving IF interference. The nearest channel 268 or 269 station is the channel 269A station WCWB-FM, File No. BLH-880307KD, at Trenton, FL at N. Latitude 29° 36' 40" W. longitude 82° 51' 14" which is 77.7 km away where a separation of 10 km is required from the proposed channel 215A facility.

AREA AND POPULATION ANALYSIS

The land area within the proposed 1 mV/m contour was determined by using a polar planimeter on the original coverage map to determine the water area within the contour which was subtracted from the total area within the contour determined by the computer in determining the distances to and plotting the contour. The population served by the proposed 1 mV/m contour was determined by using 1990 census data and a computer program which added the population of all census blocks whose centroids fall within the contour. The area and population which would be served by the proposed 1 mV/m contour are 1,602 Sq. km. and 74,552 persons respectively.

KESSLER AND GEHMAN ASSOCIATES, INC.

Keith G. Blanton

Keith G. Blanton, Consultant

December 4, 1992

UNIVERSITY OF FLORIDA
CRYSTAL RIVER, FLORIDA

ENGINEERING SPECIFICATIONS

A. Transmitter Site

Geographic coordinates determined from USGS Topo Quad:

North Latitude	28°58'24"
West Longitude	82°31'18"

Street Address	3.1 km east of Citronelle Citrus County, Florida
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B. Proposed Facility

Channel	Number	215
	Frequency	90.9 MHz

C. Antenna Height

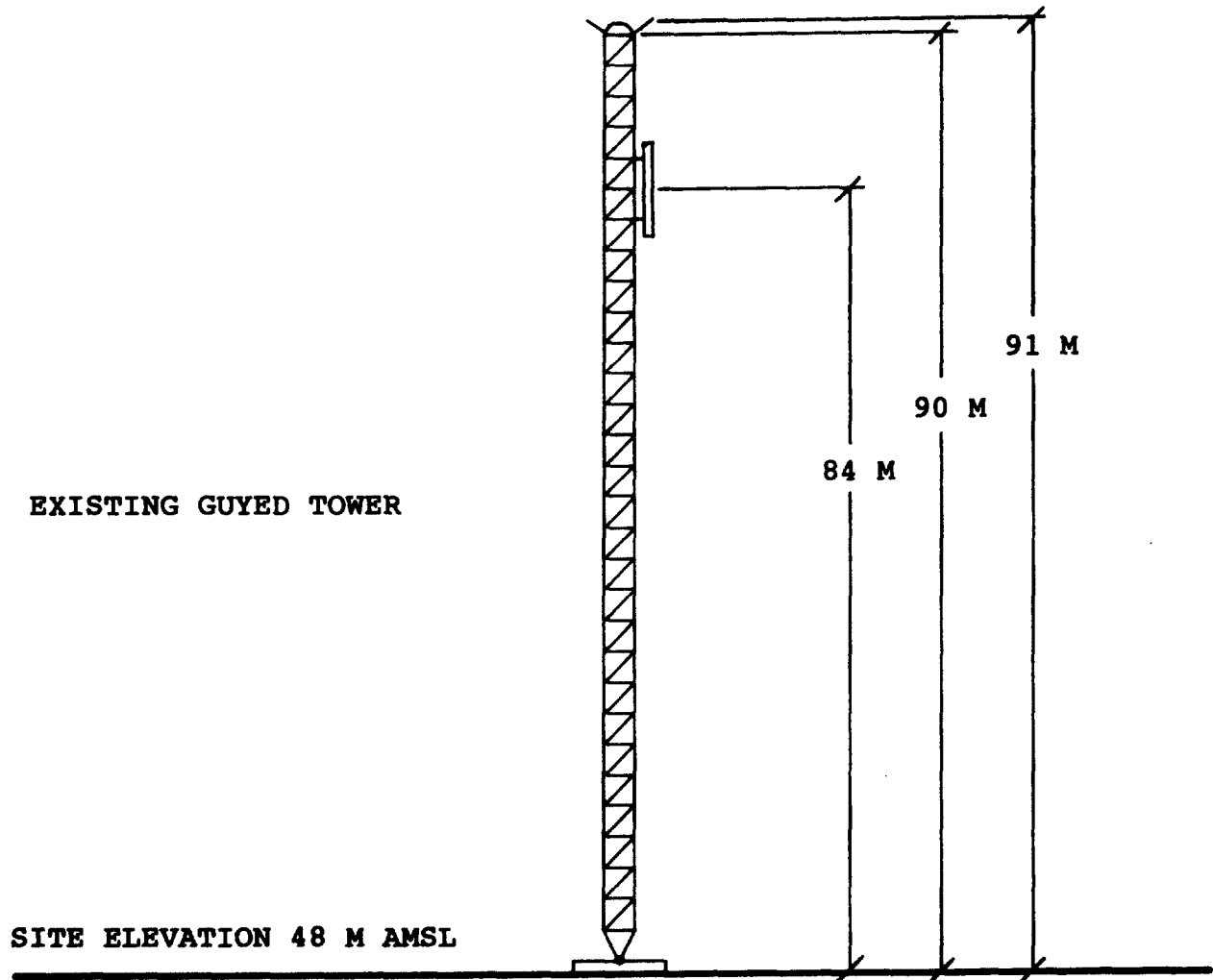
Height of site above mean sea level	48 Meters
Overall height of structure above ground (including all appurtenances)	91 Meters
Overall height of structure above mean sea level (including all appurtenances)	139 Meters
Height of site above average terrain	18 Meters
Effective height of antenna above ground	84 Meters
Effective height of antenna above average terrain	113 Meters
Effective height of antenna above mean sea level	131 Meters

D. Proposed Operation

Transmitter power output	2.29 kW
Transmission line efficiency	0.873
Input to antenna	2.0 kW

	<u>Horizontal</u>	<u>Vertical</u>
Antenna power gain	1.0	1.0
Effective radiated power	2.0 kW	2.0 kW

ELEVATION VIEW



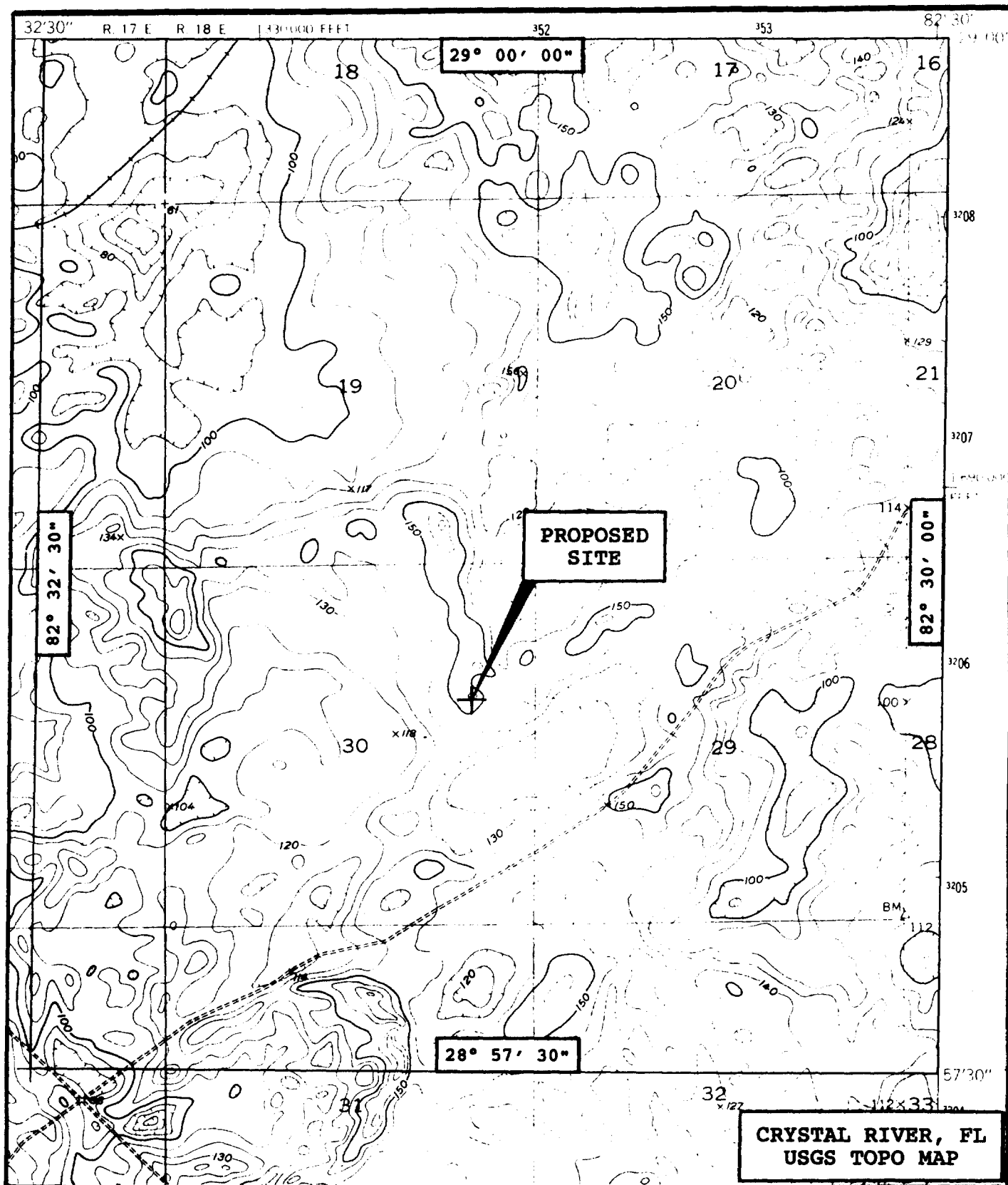
OVERALL HEIGHT, AGL 91 M
OVERALL HEIGHT, AMSL 139 M
RADIATION CENTER, AGL 84 M
RADIATION CENTER, AMSL 131 M

COORDINATES:
N. LATITUDE 28° 58' 24"
W. LONGITUDE 82° 31' 18"

NOTE: NOT TO SCALE

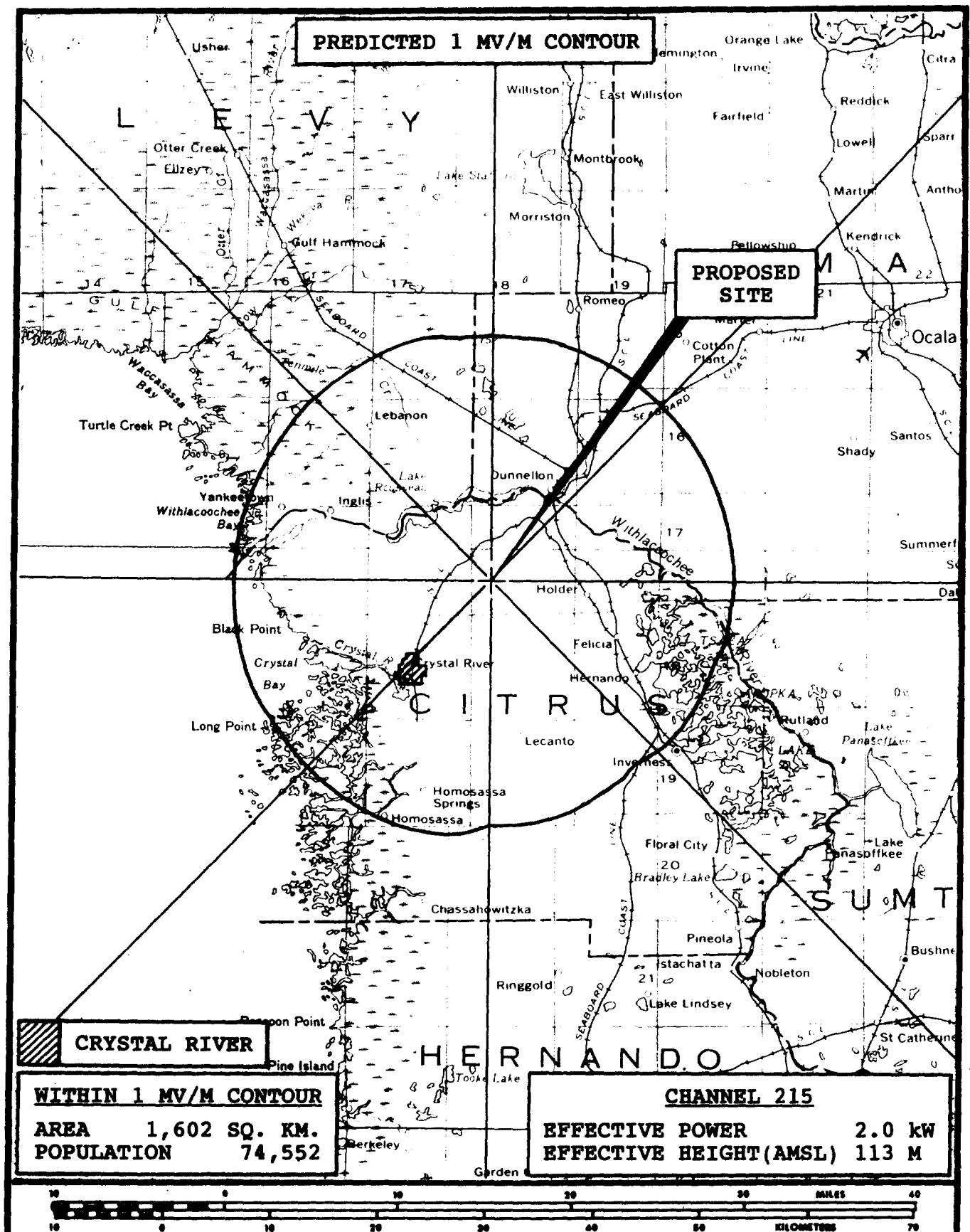
KESSLER AND GEHMAN ASSOCIATES, INC.
TELECOMMUNICATIONS CONSULTING ENGINEERS
1511 N.W. SIXTH STREET GAINESVILLE, FLORIDA 32601
904-376-3157 904-373-5225

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920515
FIGURE 2



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 904-376-3157 904-373-5225

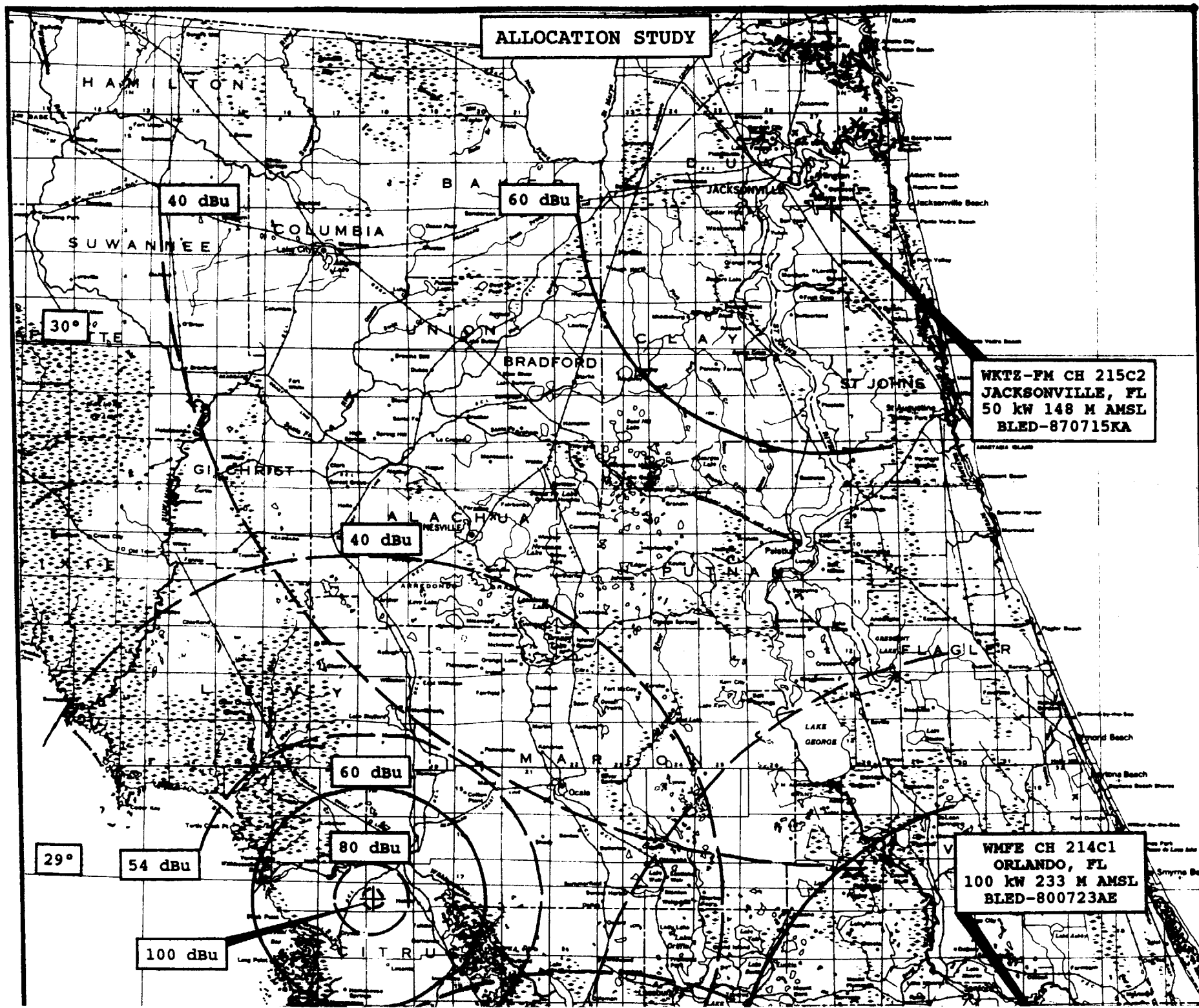
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 920515
 FIGURE 3

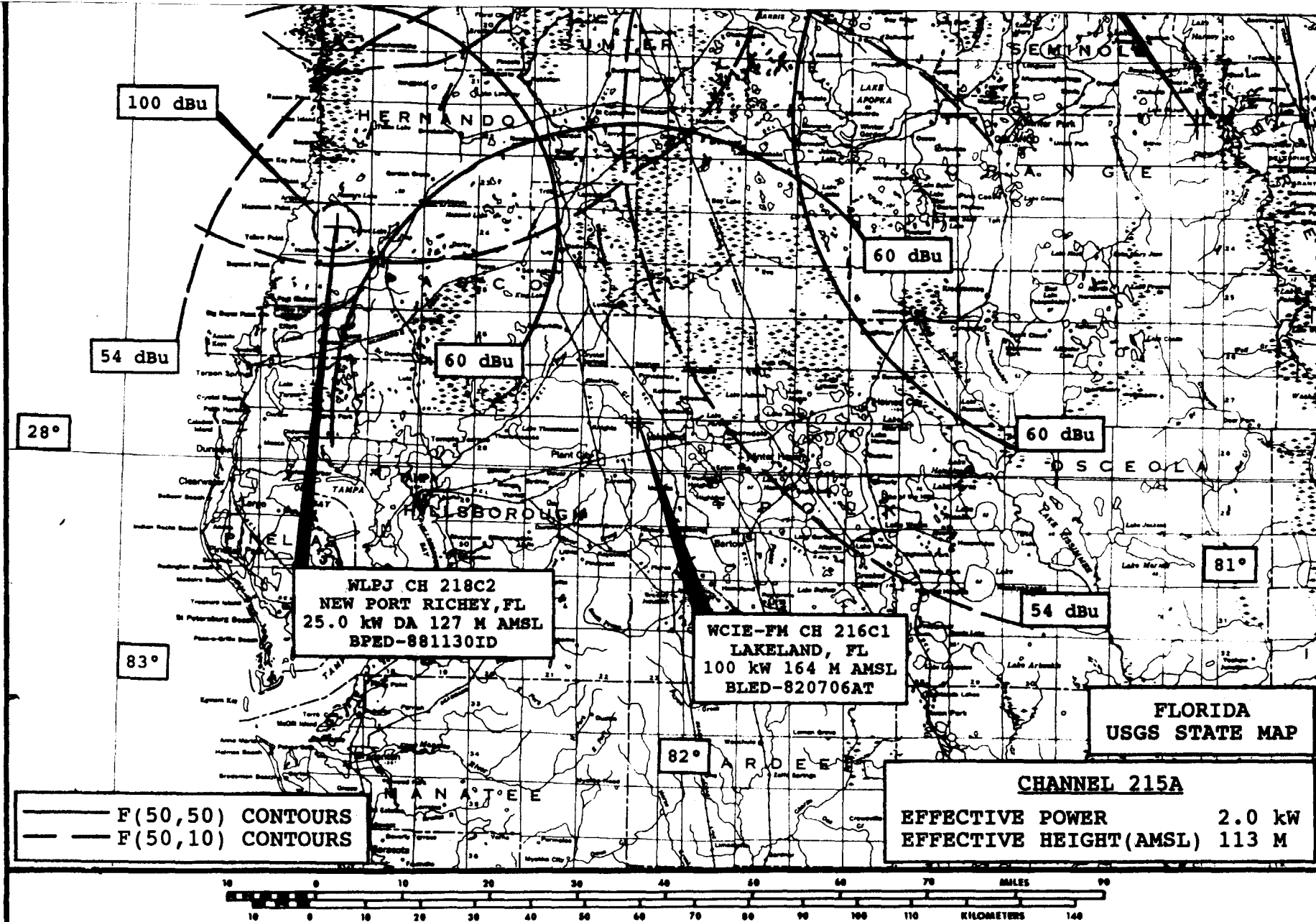


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 FIGURE 4

ALLOCATION STUDY





WLPJ CH 218C2
NEW PORT RICHEY, FL
25.0 kW DA 127 M AMSL
BPED-881130ID

WCIE-FM CH 216C1
LAKELAND, FL
100 kW 164 M AMSL
BLED-820706AT

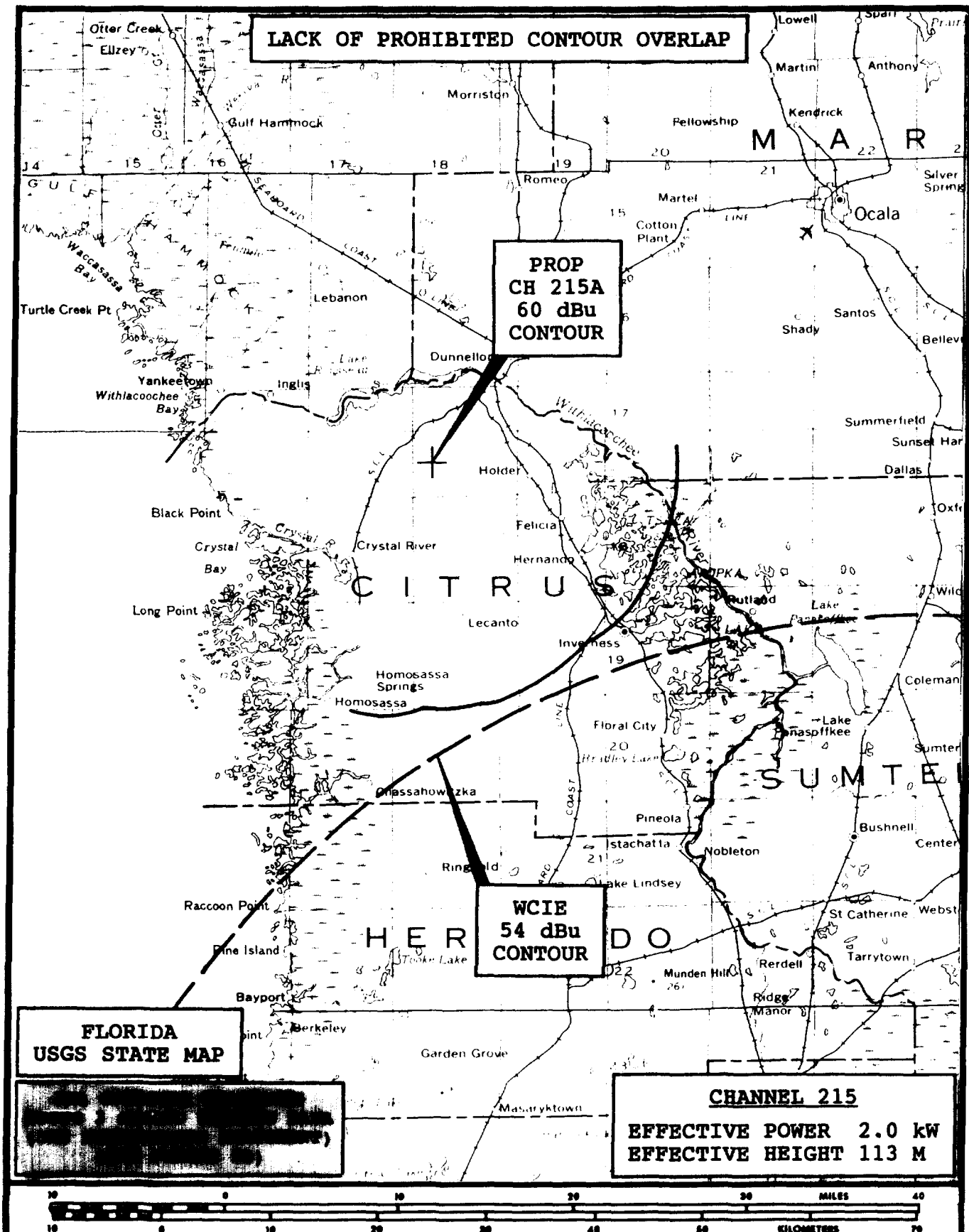
FLORIDA
USGS STATE MAP

CHANNEL 215A
EFFECTIVE POWER 2.0 kW
EFFECTIVE HEIGHT(AMSL) 113 M

— F(50,50) CONTOURS
— F(50,10) CONTOURS

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KESSLER AND GEHMAN ASSOCIATES, INC.
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FIGURE 5A

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PROPOSED NEW CH 215A 3 SECOND TERRAIN DATA
CRYSTAL RIVER, FL N. LAT. 28° 58' 24" W. LON. 82° 31' 18"

<u>AZIM</u>	<u>DIST-KM</u>	<u>AVE TER-M</u>
130.0	16.0	25.7
131.0	16.0	26.5
132.0	16.0	26.6
133.0	16.0	26.8
134.0	16.0	27.5
135.0	16.0	29.0
136.0	16.0	30.2
137.0	16.0	32.0
138.0	16.0	33.5
139.0	16.0	34.4
140.0	16.0	34.4
141.0	16.0	34.0
142.0	16.0	33.5
143.0	16.0	32.5
144.0	16.0	31.3
145.0	16.0	30.6
146.0	16.0	30.7
147.0	16.0	31.0
148.0	16.0	31.4
149.0	16.0	30.9
150.0	16.0	29.9
151.0	16.0	29.0
152.0	16.0	28.4
153.0	16.0	28.3
154.0	16.0	28.1
155.0	16.0	27.9
156.0	16.0	27.9
157.0	16.0	28.2
158.0	16.0	27.6
159.0	16.0	26.6
160.0	16.0	26.5
161.0	16.0	26.0
162.0	16.0	25.1
163.0	16.0	25.0
164.0	16.0	24.5
165.0	16.0	23.8
166.0	16.0	23.9
167.0	16.0	24.4
168.0	16.0	24.8
169.0	16.0	25.2
170.0	16.0	25.1
171.0	16.0	24.5
172.0	16.0	23.9
173.0	16.0	24.1
174.0	16.0	25.2
175.0	16.0	24.7
176.0	16.0	24.4
177.0	16.0	24.6
178.0	16.0	25.3
179.0	16.0	25.4
180.0	16.0	25.6

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NEW CH 215A CRYSTAL RIVER, FL PROPOSED OPERATION
2.0 KW ERP ND AT 131 METERS AMSL

DISTANCES TO CONTOURS (Kilometers): USING 3 SECOND TERRAIN DATA

Frequency: 90.9000 MHz
Coordinates: N 28 58 24 W 82 31 18
F(50,50) Curves Number of Contours: 1

AZ (degs)	HAAT (m)	ERP (kW)	60.0 (dBu)	AZ (degs)	HAAT (m)	ERP (kW)	60.0 (dBu)
130.0	105	2.0000	22.6	177.0	106	2.0000	22.7
131.0	104	2.0000	22.5	178.0	106	2.0000	22.7
132.0	104	2.0000	22.5	179.0	106	2.0000	22.7
133.0	104	2.0000	22.5	180.0	105	2.0000	22.6
134.0	103	2.0000	22.4				
135.0	102	2.0000	22.3				
136.0	101	2.0000	22.1				
137.0	99	2.0000	22.0				
138.0	97	2.0000	21.8				
139.0	97	2.0000	21.7				
140.0	97	2.0000	21.7				
141.0	97	2.0000	21.7				
142.0	98	2.0000	21.8				
143.0	98	2.0000	21.9				
144.0	100	2.0000	22.0				
145.0	100	2.0000	22.1				
146.0	100	2.0000	22.1				
147.0	100	2.0000	22.1				
148.0	100	2.0000	22.0				
149.0	100	2.0000	22.1				
150.0	101	2.0000	22.2				
151.0	102	2.0000	22.3				
152.0	103	2.0000	22.3				
153.0	103	2.0000	22.4				
154.0	103	2.0000	22.4				
155.0	103	2.0000	22.4				
156.0	103	2.0000	22.4				
157.0	103	2.0000	22.4				
158.0	103	2.0000	22.4				
159.0	104	2.0000	22.5				
160.0	105	2.0000	22.5				
161.0	105	2.0000	22.6				
162.0	106	2.0000	22.7				
163.0	106	2.0000	22.7				
164.0	107	2.0000	22.7				
165.0	107	2.0000	22.8				
166.0	107	2.0000	22.8				
167.0	107	2.0000	22.8				
168.0	106	2.0000	22.7				
169.0	106	2.0000	22.7				
170.0	106	2.0000	22.7				
171.0	106	2.0000	22.7				
172.0	107	2.0000	22.8				
173.0	107	2.0000	22.8				
174.0	106	2.0000	22.7				
175.0	106	2.0000	22.7				
176.0	107	2.0000	22.8				

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LICENSED WCIE-FM CH 216C1 3 SECOND TERRAIN DATA
FILE NO. BLED-820706AT N. LAT. 28° 04' 46" W. LON. 82° 02' 27"

<u>AZIM</u>	<u>DIST-KM</u>	<u>AVE TER-M</u>
320.0	16.0	27.9
321.0	16.0	27.9
322.0	16.0	27.8
323.0	16.0	27.8
324.0	16.0	27.8
325.0	16.0	27.8
326.0	16.0	27.9
327.0	16.0	28.0
328.0	16.0	28.2
329.0	16.0	28.3
330.0	16.0	28.4
331.0	16.0	28.6
332.0	16.0	28.8
333.0	16.0	29.1
334.0	16.0	29.3
335.0	16.0	29.5
336.0	16.0	29.7
337.0	16.0	30.0
338.0	16.0	30.2
339.0	16.0	30.5
340.0	16.0	30.7
341.0	16.0	30.8
342.0	16.0	30.9
343.0	16.0	31.1
344.0	16.0	31.4
345.0	16.0	31.6
346.0	16.0	31.9
347.0	16.0	32.1
348.0	16.0	32.2
349.0	16.0	32.4
350.0	16.0	32.6

UNIVERSITY OF FLORIDA
CRYSTAL RIVER, FLORIDA

WCIE-FM CH 216C1 LAKELAND, FL LICENSED OPERATION
FILE NO. BLED-820706AT ERP 100 KW ND AT 164 METERS AMSL

DISTANCES TO CONTOURS (Kilometers): USING 3 SECOND TERRAIN DATA

Frequency: 91.1000 MHz
Coordinates: N 28 4 46 W 82 2 27
F(50,10) Curves Number of Contours: 1

AZ (degs)	HAAT (m)	ERP (kW)	54.0 (dBu)
320.0	136	100.0000	86.1
321.0	136	100.0000	86.1
322.0	136	100.0000	86.1
323.0	136	100.0000	86.1
324.0	136	100.0000	86.1
325.0	136	100.0000	86.1
326.0	136	100.0000	86.1
327.0	136	100.0000	86.0
328.0	136	100.0000	86.0
329.0	136	100.0000	86.0
330.0	136	100.0000	86.0
331.0	135	100.0000	86.0
332.0	135	100.0000	85.9
333.0	135	100.0000	85.9
334.0	135	100.0000	85.8
335.0	134	100.0000	85.8
336.0	134	100.0000	85.8
337.0	134	100.0000	85.7
338.0	134	100.0000	85.7
339.0	134	100.0000	85.7
340.0	133	100.0000	85.6
341.0	133	100.0000	85.6
342.0	133	100.0000	85.6
343.0	133	100.0000	85.6
344.0	133	100.0000	85.5
345.0	132	100.0000	85.5
346.0	132	100.0000	85.5
347.0	132	100.0000	85.4
348.0	132	100.0000	85.4
349.0	132	100.0000	85.4
350.0	131	100.0000	85.4

